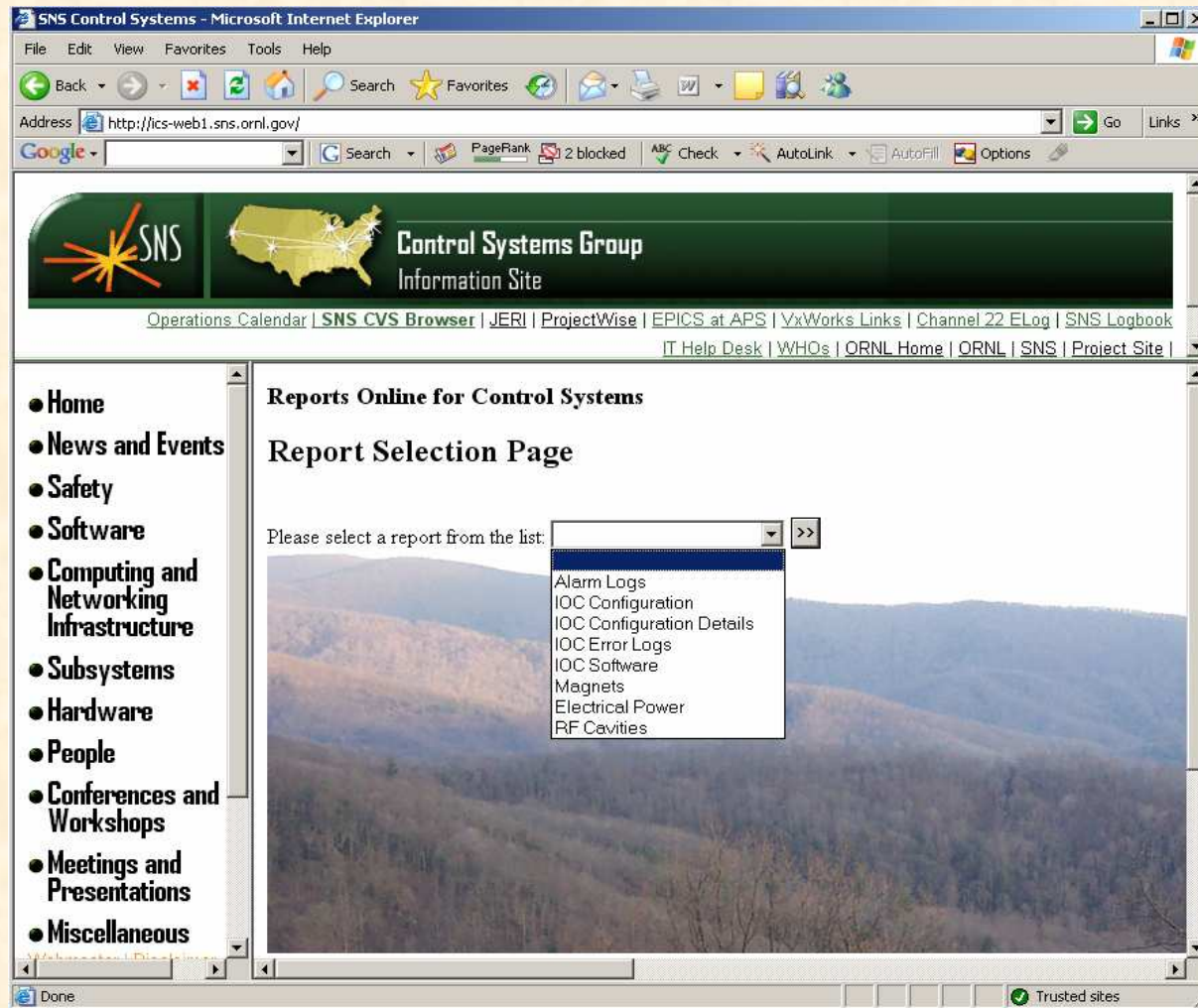


ROCS

Web Based Reporting Tool Using SNS Relational Database

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ROCS: Reports Online for Control Systems



- IOC Alarm Logs
- Devices
- IOC Configuration
- IOC Configuration Details
- IOC Error Logs
- IOC Software
- Magnets
- Electrical Power
- RF Cavities

ROCS: User Perspective

- ROCS is a part of Control Systems website
- It provides fast online access to current info stored in RDB
- User does not need to know SQL: user builds a report by mouse clicks:
 - Setting conditions
 - Selecting columns
 - Specifying order etc
- SNS naming standard is used to narrow list of devices
 - system
 - subsystem
 - device type
 - instance

ROCS: Technology Used

- Apache Tomcat appl. server
- SNS RDB (Oracle)
- JSP Framework
- JSP pages are compiled into servlets on the fly and perform processing on server
- Response webpage is a combination of template data and dynamically generated data

appl server

database

webpage

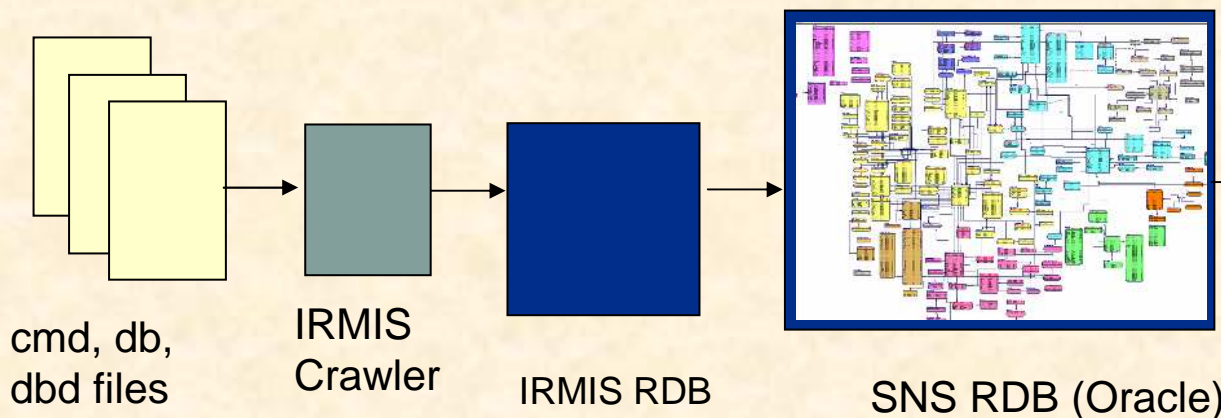
ROCS: Sources of Data

- **Data are stored in RDB**
 - SNS Oracle database
- **Ways to add data to SNS RDB:**
 - IRMIS Crawler
 - JERI (online editable reports system)
 - Single task crawler type programs
 - Online editable reports (ROCS)
 - XAL Framework
 - Spreadsheets loaded by SSLoader.java
 - Manual loads and updates

Example 1: IOC Configuration Details

- **Purpose:**
 - Provide IOC configuration information in fast to access and easy to analyze form
- **Data source:**
 - Startup.cmd, bootline, st, iocInfo files, db and dbd files
- **Saving data to Oracle:**
 - IRMIS crawler

<http://ics-web1.sns.ornl.gov:1982/reports2>



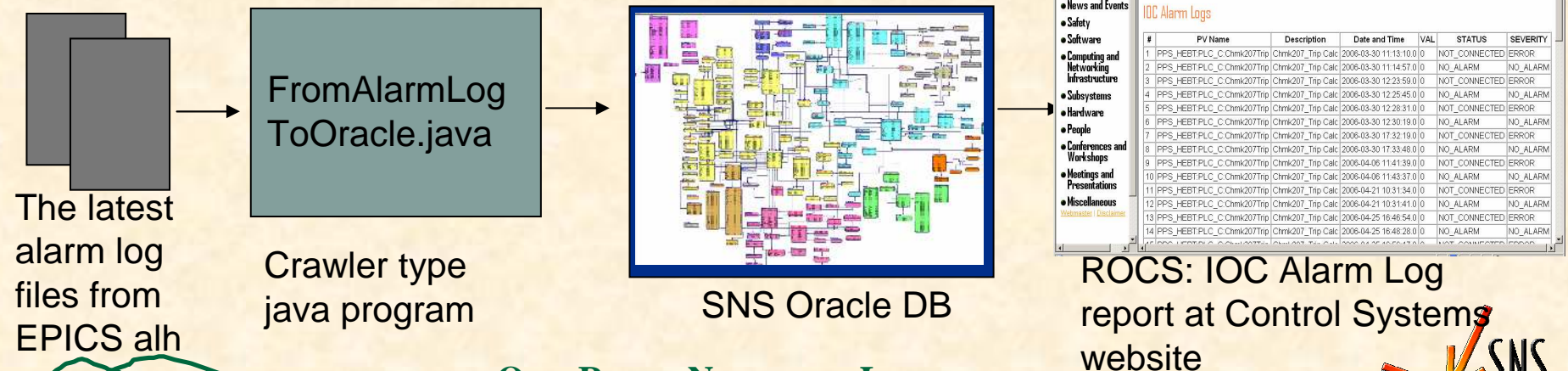
The screenshot shows the 'Control Systems Group Information Site' with a navigation menu on the left. The main content area displays the 'IOC Configuration Details' report. The report includes a table with columns for Device, Time/Date Stamp of BootLine, Epics Release, VxWorks BSP version, VxWorks OS version, Shared CVS Module Names, and Shared Release. The report was generated on Wed Jun 07 17:03:29 EDT 2006.

#	Device	Time/Date Stamp of BootLine	Epics Release	VxWorks BSP version	VxWorks OS version	Shared CVS Module Names	Shared Release
1	OCL_HPRFIOC1	2006-05-25 10:25:29.0	EPICS R3.14.7	1.2/SNS07_posix	5.5.1	ether_ip	ether_ip
2	OCL_HPRFIOC3	2006-05-25 10:21:02.0	EPICS R3.14.7	1.2/SNS07_posix	5.5.1	ether_ip	ether_ip
3	OCL_RCCSIOC1	2006-05-11 14:12:56.0	EPICS R3.14.7	1.2/SNS07_posix	5.5.1	ether_ip	ether_ip
4	OCL_VacIOC1	2006-03-27 13:34:28.0		1.2/SNS07_posix	5.5.1	ether_ip	ether_ip
5	CF_JCSIOC_CFCC	2006-06-06 18:10:11.0	EPICS R3.14.7	1.2/SNS07_posix	5.5.1	ether_ip	ether_ip

ROCS: IOC Configuration Details report at Control Systems website

Example 2: IOC Alarm Logs

- **Purpose:**
 - provide alarm info in such a form that is easy to access and convenient to analyze
- **Data source:**
 - The latest alarm log files from EPICS alh
- **Saving data to Oracle:**
 - FromAlarmLogToOracle.java



FromAlarmLogToOracle.java

- Single task crawler type program
- Accepts list of directories from cfg file
- Accepts number of files to process or filename(s) from command line
- Reads alarm records from each file using Pattern and Matcher Java classes:

```
<entry><date>09-Jun-2006</date> <time>00:00:01</time>  
  <pv>PPS_Ring:PLC_C:Chmk107Fail</pv>  
<desc>Chmk107 Pulse TO Fail</desc> <value>1</value>  
  <status>LINK</status> <severity>MAJOR</severity></entry>
```
- Saves record to RDB (epics. alarm_log table)

<http://ics-web1.sns.ornl.gov:1982/reports2>

ROCS Development: Problems

- Gaps in data (work in process)
- User interface issues (convenience of tools to load data into RDB)
- Data integrity and security (controllable access to data)
- Standardization
 - Naming convention (search!)
 - File system layout (automated loads)

ROCS Benefits

- Platform independent
- User friendly
- Quality Control
 - IOC Configuration mgt
 - Global IOC error detection (potential problems)
 - IOC alarm mgt (system availability) – respond and tracking of alarms
 - Electrical Power information (Ex: power outage)

Our Acknowledgements

- **Jeff Patton**
- **Greg Lawson**
- **Dave Purcell**
- **Kay Kasemir**
- **Andrei Shishlo**